

5. (Allowed) The method of claim 1 wherein the matrix A is chosen so that an importance rank of a node is calculated, in part, from a measure of distances between the node and backlink nodes of the node.

6. (Allowed) The method of claim 1 wherein the initial N -dimensional vector p_0 is selected to represent a uniform probability distribution.

7. (Allowed) The method of claim 1 wherein the initial N -dimensional vector p_0 is selected to represent a non-uniform probability distribution, wherein a predetermined set of nodes is given a relatively large initial probability.

8. (Canceled)

9. (Allowed) A computer implemented method for calculating an importance rank for each of N linked web page documents, the method comprising the steps of:

(a) selecting an initial N -dimensional vector p_0 wherein each component of p_0 represents an initial estimate of a probability that a user arrive at a given web page document after a large number of forward links;

(b) computing an approximation p_n to a steady-state probability p_{∞} , wherein each component of p_n represents an improved estimate of a probability that the user will randomly at a given web page document, in accordance with the equation $p_n = A^n p_0$, where A is an $N \times N$ transition probability matrix having elements $A[i][j]$ representing a probability of moving from web page document i to web page document j , and

(c) determining a rank $r[k]$ for a web page document k from a k^{th} component of p_n , wherein $r[k]$ represents an importance of the information contained in a particular web page document k .

10. (Allowed) The method of claim 9 wherein the matrix a is chosen so that an importance rank of a given web page document is calculated, in part, from a weighted sum of importance ranks of web page documents backlinked to the given web page document.

11. (Allowed) The method of claim 10 wherein the importance ranks of each of the backlinked web page documents is weighted in dependence upon the total number of links in the backlinked web page document.

12. (Allowed) The method of claim 9 wherein the matrix A is chosen so that an importance rank of a web page document is calculated, in part, from a constant α representing the probability that a surfer will randomly jump to the web page document.

13. (Allowed) The method of claim 9 wherein the matrix A is chosen so that an importance rank of a web page document is calculated, in part, from a measure of distances between the web page document and backlink nodes of the web page document.



14. (Allowed) The method of claim 9 wherein the initial N-dimensional vector p_0 is selected to represent a uniform probability distribution.

15. (Allowed) The method of claim 9 wherein the initial N-dimensional vector p_0 is selected to represent a non-uniform probability distribution, wherein a predetermined set of web page documents is given a relatively large initial probability.

16-17. (Canceled)

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18. (Amended) A computer implemented method of ranking a plurality of linked documents, comprising: [The method of claim 16]
obtaining a plurality of linked documents;
for each linked document pointed to by a link in one or more of the plurality of linked documents, assigning a rank to the linked document that is dependent on ranks of the one or more of the plurality of linked documents, wherein each of the ranks of the one or more of the plurality of linked documents are adjusted by a weight; and
processing the plurality of linked documents according to their rank.

19. The method of claim 18, wherein the weight is dependent on the number of links in the one or more of the plurality of linked documents.

20. The method of claim 18, wherein the weight is dependent on an estimation of a probability that a linked document will be accessed.

21. The method of claim 18, wherein the weight is dependent on the URL, host, domain, author, institution, or last update time of the one or more plurality of linked documents.

22. The method of claim 18, wherein the weight is dependent on whether the one or more plurality of linked documents are selected documents or roots.

23. The method of claim 18, wherein the weight is dependent on the importance, visibility or textual emphasis of the links in the plurality of linked documents.

24. The method of claim 18, wherein the weight is dependent on a particular user's preferences, the rate at which users access the one or more plurality of linked documents, or the importance of the one or more plurality of linked documents.

606D3 25. (Amended) A computer implemented method of ranking a plurality of linked documents, comprising: [The method of claim 16]
obtaining a plurality of linked documents;
for each linked document pointed to by a link in one or more of the plurality of linked documents, assigning a rank to the linked document that is dependent on ranks of the one or more of the plurality of linked documents; and
processing the plurality of linked documents according to their rank, wherein the processing includes displaying links to the plurality of linked documents as results from a search.

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obtaining a plurality of linked documents;
for each linked document pointed to by a link in one or more of the plurality of linked documents, assigning a rank to the linked document that is dependent on ranks of the one or more of the plurality of linked documents; and
processing the plurality of linked documents according to their rank, wherein the processing includes crawling the plurality of linked documents.

27. (Amended) A computer implemented method of ranking a plurality of linked documents, comprising: [The method of claim 16]
obtaining a plurality of linked documents;
for each linked document pointed to by a link in one or more of the plurality of linked documents, assigning a rank to the linked document that is dependent on ranks of the one or more of the plurality of linked documents; and
processing the plurality of linked documents according to their rank, wherein the processing includes displaying links to the plurality of linked documents as a directory listing.

606D4 28. (Amended) A computer implemented method of ranking a plurality of linked documents, comprising: [The method of claim 16, further comprising:]
obtaining a plurality of linked documents;
generating an initial estimate of the rank of each of the one or more plurality of linked documents; [and]
updating the estimate of the rank for each of the one or more plurality of linked documents utilizing estimates of ranks for linked documents that include a link to the linked document;

for each linked document pointed to by a link in one or more of the plurality of linked documents, assigning a rank to the linked document that is dependent on ranks of the one or more of the plurality of linked documents; and
processing the plurality of linked documents according to their rank.

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would.

29. (Amended) A computer implemented method of ranking a plurality of linked documents, comprising: [The method of claim 16]
obtaining a plurality of linked documents;
for each linked document pointed to by a link in one or more of the plurality of linked documents, assigning a rank to the linked document that is dependent on ranks of the one or more of the plurality of linked documents; and
processing the plurality of linked documents according to their rank, wherein the processing includes displaying links to the plurality of linked documents and annotations representing the relative importance or rank of each of the plurality of linked documents.

30. The method of claim 29, wherein the annotations are bars, icons or text.

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31. (Amended) A computer implemented method of ranking a plurality of linked documents, comprising: [The method of claim 16]
obtaining a plurality of linked documents;
for each linked document pointed to by a link in one or more of the plurality of linked documents, assigning a rank to the linked document that is dependent on ranks of the one or more of the plurality of linked documents; and
processing the plurality of linked documents according to their rank, wherein the plurality of linked documents are also processed according to textual matching.

32. The method of claim 31, wherein the textual matching includes anchor text associated with the links.

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33. (Amended) A computer implemented method of ranking a plurality of linked documents, comprising: [The method of claim 16]
obtaining a plurality of linked documents;
for each linked document pointed to by a link in one or more of the plurality of linked documents, assigning a rank to the linked document that is dependent on ranks of the one or more of the plurality of linked documents; and

processing the plurality of linked documents according to their rank, wherein the plurality of linked documents are also processed according to groupings of the plurality of linked documents.

34-35. (Canceled)

36. (Amended) A computer implemented method of ranking a plurality of linked documents, comprising: [The method of claim 34]
performing a random traversal of a plurality of linked documents, wherein performing a random traversal includes selecting a random link to traverse in a current linked document;
for each linked document that is traversed, assigning a rank to the linked document that is dependent on the number of times the linked document has been traversed; and
processing the plurality of linked documents according to their rank.

37. The method of claim 36, wherein there is a predetermined probability that the next linked document to be traversed will be a random one of the plurality of linked documents.

REMARKS

Claims 1-7, 9-15, 18-33, and 36-37 are pending in the application. In a sincere effort to expedite prosecution, Applicant canceled claims 8, 16-17 and 34-35 without disclaiming the subject matter therein. Applicant reserves all right to pursue these or other claims in a continuing application. In light of the amendments, Applicant believes all the pending claims are in condition for allowance.

Claims 1-7 and 9-15 were allowed. Claims 18-33 and 36-37 were objected to as being depended upon a rejected base claim, but it was indicated that the claims would be allowed if rewritten in independent form including all the limitations of the base claim and any intervening claims. Applicant has amended these claims accordingly so the claims are allowable.

The drawings were objected to as allegedly not illustrating the claimed subject matter. Although Applicant disagrees with the objection, Applicant proposes adding Figure 3 and accompanying text that correspond to claim 1 of the application as originally filed. No new matter has been added as the subject matter was included in the application as originally filed.

For the foregoing reasons, Applicant believes all the pending claims are in condition for allowance and should be passed to issue. If the Examiner feels that a telephone conference would